

atggcttcctcagttctttcctctgcagcagttgccacccgcagcaatggttgctcaagct  
M A S S V L S S A A V A T R S N V A Q A

aacatgggttgacctttcactggccttaagtcagctgcctcattccctgtttcaaggaag  
N M V A P F T G L K S A A S F P V S R K

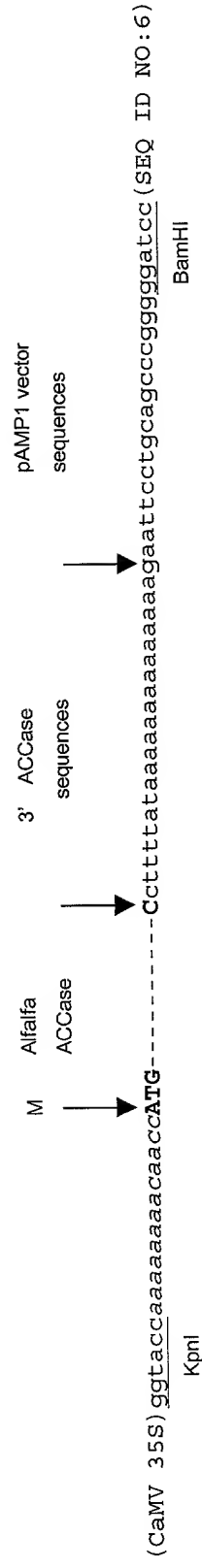
caaaaccttgacatcacttccattgccagcaacggcggaagagtgcaatgcatgcaggtg  
Q N L D I T S I A S N G G R V Q C M Q V

tggccaccaattaacaagaagtcc (SEQ ID NO:3)  
W P P I N K K S (SEQ ID NO:4)

**Figure 1**

M  
 ↓  
 ssRubisco  
 transit  
 (CaMV 35S) ggtagcaaacccATGgcttcctcagttccttcctctcagtcagtcagttgccacccgcagcaaatggtgctcaag  
 KpnI  
 ctaaacatggttgacacttcactggccttaagtcagctgcctcattccctggtttcaaggaaagcaaaaccttgacatcacttcatt  
 gccagcaacggcggaagagtgcgaatgcATGCAGGTGTGGCCACCAATTAAACAAGATCCATG-----Cctttttataaaa  
 ssRubisco  
 mature  
 Alfalfa  
 ACCase  
 3' ACCase  
 sequences  
 aaaaaaaaaaattcctgcagcccccggggatcc (SEQ ID NO:5)  
 BamHI  
 pAMP1 vector  
 sequences

## Figure 2



**Figure 3**

atggctagcgtgggcccgtggaaatggatattttaacagtggtgctaccgagtaggcaccctgctactacaaccgaa  
M A S V G R G N G Y L N S V L P S R H P A T T T E  
gtagatgaatactgcaatgcccttggaggaaacaagccgattcatagcatattgattgcaaacaatggaatggca  
V D E Y C N A L G G N K P I H S I L I A N N G M A  
gcagtcaggtttatacgtagtgttaggagttgggcttacgagacatttggcacggaaaaagctatcttgttggtt  
A V K F I R S V R S W A Y E T F G T E K A I L L V  
gccatggcaactccagaggatatgagaatcaatgcagaacatatcagaatagccgatcaatttgtggaagtacct  
A M A T P E D M R I N A E H I R I A D Q F V E V P  
gggtgggaccaataacaataactacgccaatgtgcagcttattctagagattgctgagataactcacgttgatgcg  
G G T N N N N Y A N V Q L I L E I A E I T H V D A  
gtgtggcctgggttggggtcatgcatacagaaaatcctgagcttccagatgcattaaaagcaaagggaattgtattc  
V W P G W G H A S E N P E L P D A L K A K G I V F  
cttggacctcctgctatatctatggcagcattgggagacaaaattggttcctcgttgattgctcaggcagcagaa  
L G P P A I S M A A L G D K I G S S L I A Q A A E  
gttccaacccttccatggagtgggttctcatgtgaaaattcctccagaaagtgacttgattactattcctgatgaa  
V P T L P W S G S H V K I P P E S D L I T I P D E  
atttaccgtgcagcatgtgtttataacaacagaagaagcaattgcaagttgtcaagtagtaggttaccctgcaatg  
I Y R A A C V Y T T E E A I A S C Q V V G Y P A M  
attaaggcatcttgggggtggtggcggaaggcataagaaagggttcataatgatgatgaggttagggcattgttc  
I K A S W G G G G K G I R K V H N D D E V R A L F  
aagcaagttcaaggtgaagtaccagggtcacctatatatttataatgaaagttgcttcccagagccgacatcttgaa  
K Q V Q G E V P G S P I F I M K V A S Q S R H L E  
gtccaattgatttgcgatcagcacggaaatttgcagcattgcacagccgtgattgtagtgttcaaagaaggcat  
V Q L I C D Q H G N F A A L H S R D C S V Q R R H  
caaaagattattgaagaggggtcccattactgtagcacctccagaaacggtgaaagaacttgaacaggcgggctaga  
Q K I I E E G P I T V A P P E T V K E L E Q A A R  
agattagctaaatctgtaaattatgtgggggcagctaccgttgagtatctttatagcatggaaactggcgagtac  
R L A K S V N Y V G A A T V E Y L Y S M E T G E Y  
tacttttttagagttgaacccccgactacaggttgagcatcctgttactgaatggatagctgagataaatctgcca  
Y F L E L N P R L Q V E H P V T E W I A E I N L P  
gcagcacaagttgcagttgggatgggcatcccaactctggcaaatcctgagattaggcgtttctatgggatggaa  
A A Q V A V G M G I P L W Q I P E I R R F Y G M E  
catgggtgggggaaatgatggttgaagaaaacatcagtggttagctacccttttggattttgaogaagcacaatct  
H G G G N D G W K K T S V L A T P F D F D E A Q S

**Figure 4-1**

acaaagccgaaaggtcattgtgtggctgtacgagtcaccagtgaggaccccgatgatggttttacgcctacagga  
 T K P K G H C V A V R V T S E D P D D G F T P T G  
 ggaaaagtgcaggagctcagcttttaaagcaagccaaatgtgtggccttatttctctgttaagtccggaggagga  
 G K V Q E L S F K S K P N V W A Y F S V K S G G G  
 attcatgaattctcagattctcaatttggacatgttttgcgtttggagaatctagagcttttagcaattgcaa  
 I H E F S D S Q F G H V F A F G E S R A L A I A N  
 atgggtactggggttgaaggaaattcaaattcgaggagaaattcgtaccaacggtgattacacaattgatcttctg  
 M V L G L K E I Q I R G E I R T N V D Y T I D L L  
 aatgcttcagactacagagacaacaaaattcacacaggatggctagacagtagaattgcaatgcgggtagagca  
 N A S D Y R D N K I H T G W L D S R I A M R V R A  
 gagaggcctccctggatctgtctgttgttgggtggggcactctataaagcttctgccagcagtgacagctttagt  
 E R P P W Y L S V V G G A L Y K A S A S S A A L V  
 tcggactatgttggctatcttgaaaaggggcaaattccctcccaagcacatttctcttgtccattctcaagtttct  
 S D Y V G Y L E K G Q I P P K H I S L V H S Q V S  
 ttgagcattgaaggaagcaaatacacgattgacatggtacgaggaggacctggaagttacaaattgaaattgaat  
 L S I E G S K Y T I D M V R G G P G S Y K L K L N  
 caatcggagatagaagcggagatacacactttacgtgatggaggttgcataatgcagttggatggaaacagtc  
 Q S E I E A E I H T L R D G G L L M Q L D G N S H  
 gtaatatatgcagaggaagaagcagctggaactcggcttttaatatagatggaaggacttgcttgcttcagaatgat  
 V I Y A E E E A A G T R L L I D G R T C L L Q N D  
 gacgatccatcaaagttaattggagagacaccgtgcaagcttctgagatatttggttgccgatgatagtcagatt  
 D D P S K L I G E T P C K L L R Y L V A D D S Q I  
 gatgcagacacaccatagctgaagttgaggtcatgaagatgtgcacgctcttctttccctgcttctggaatt  
 D A D T P Y A E V E V M K M C M P L L S P A S G I  
 attcatttcagaatggctgaaggtcaagccatgcaggctggtgaacttatagcaaagcttgatctagatgatgg  
 I H F R M A E G Q A M Q A G E L I A K L D L D D G  
 tctgcagtaaggaaggcagaacccttcactgggagcttccctatcctgggccctcctactgcaatttcaggtaaa  
 S A V R K A E P F T G S F P I L G P P T A I S G K  
 gttcatcagaaatgtgcagcaagcttaaacgctgcacggatgattcttgcgtggctatgagcacaacattgatgaa  
 V H Q K C A A S L N A A R M I L A G Y E H N I D E  
 gttgtgggtcaaaagtttgcctcaattgccttgacagccctgaactgcctttccttcaatggcaagagtgctttgca  
 V V V K S L L N C L D S P E L P F L Q W Q E C F A  
 gttttggcaaccgctcttcccaaagatcttagaaaacgagttggaagctaaatataaggagttcgaaattatttca  
 V L A T R L P K D L R N E L E A K Y K E F E I I S

**Figure 4-2**

agctcccaaactattgatttcctgccaattattgaaggcaatccttgaagctcatctttcctcctgtcctgaa  
 S S Q T I D F P A K L L K A I L E A H L S S C P E  
 aacgaaaaaggagccttagaaagactagtgaaccgctgacaagtcttgtaaagtcttatgaggggtggaagagag  
 N E K G A L E R L V E P L T S L V K S Y E G G R E  
 agccatgctcataaaattgttcaatctctatttgaagagtatctttcagttgaagaactattcagtgataatata  
 S H A H K I V Q S L F E E Y L S V E E L F S D N I  
 caggctgatgtaattgaacgactccgtcttcaatacaagaaagatttgttgaagattgtagatattgtgctctct  
 Q A D V I E R L R L Q Y K K D L L K I V D I V L S  
 catcaggggtgtcaagagcaaaaaacaagctgatactgcgactaatggataaactggtttaccctaatacctgctgcc  
 H Q G V K S K N K L I L R L M D K L V Y P N P A A  
 tatagggatcaattaatccgattctcccaactcaaccatatagtttattctgagttggctcttaaggcaagtcaa  
 Y R D Q L I R F S Q L N H I V Y S E L A L K A S Q  
 ctgttggagcaaaactaaactcagtgaaacttcgatccagcattgctagaagtctttctgaactagaaatgtttacc  
 L L E Q T K L S E L R S S I A R S L S E L E M F T  
 gaggatggtgaaaaattgatactccgaagaggaagagtgccattaatgacagaatggaggaccttgtgagcgct  
 E D G E N I D T P K R K S A I N D R M E D L V S A  
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 P L A V E D A L V G L F D H S D H T L Q R R V V E  
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 T Y I R R L Y Q P Y L V K D S I R M Q W H R S G L  
 attgctacatgggaattcttagaagaatacgttgaacggaagaatgggggttgaagacaaaacactggtgagaaaa  
 I A T W E F L E E Y V E R K N G V E D K T L V E K  
 catagtgagaagaaatggggagtgtggttgaattaaatctcttcagtttttgcagcaattatcagtgctgca  
 H S E K K W G V M V V I K S L Q F L P A I I S A A  
 ttaagagaagcaaccaataactttcacgatcctcttaaaagtgggttctggtgactcaagtaaccatggtaatatg  
 L R E A T N N F H D P L K S G S G D S S N H G N M  
 atgcatattggattagtggggatcaacaaccaaatacgtttacttcaagacagtggtgatgaggatcaggetcaa  
 M H I G L V G I N N Q M S L L Q D S G D E D Q A Q  
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 E R I D K L A K I L R E Q E I G S I I H A A G V G  
 gatattagctgtatcatagaggggatgaagggcgtgctccaatgaggcattcctttcactgggtcatctgaaaag  
 D I S C I I Q R D E G R A P M R H S F H W S S E K  
 ctatattatgtagaggaaccattgttgcctcatcttgaacctccctatccatttatcttgaactggacaagctt  
 L Y Y V E E P L L L H L E P P L S I Y L E L D K L

**Figure 4-3**

aagtgtatgaaaatattcgctatacaccatcccagagatcgtaatggcacctctacacagttgtggataccaag  
K C Y E N I R Y T P S R D R Q W H L Y T V V D T K  
ccacaaccaattcaaa<sup>7</sup>aatgtttcttcgaacacttatcagacagccaaccacaaatgaaggatactcttcttat  
P Q P I Q R M F L R T L I R Q P T T N E G Y S S Y  
caaagactggatgcagaaaacgtcccgtacccaattggctatgtcttatacttcaaggagcatttttaggtcccta  
Q R L D A E T S R T Q L A M S Y T S R S I F R S L  
atgggcgcaatggaggagttggaacttaactcacacaataccaccatcaa<sup>7</sup>ctgaacatgctcatatgtacctc  
M G A M E E L E L N S H N T T I K S E H A H M Y L  
tatatcatacgcgagcagcaaatagatgatcttgtgccttattccaagaaaattaacatagaagctggccaagaa  
Y I I R E Q Q I D D L V P Y S K K I N I E A G Q E  
gaaacaacagttgaggcaatcttgaagaactggcacaggaaatccattcctctgttgggtgaagaatgcacaga  
E T T V E A I L E E L A Q E I H S S V G V R M H R  
ttaggcgttttcgtgtgggaaatcaagctctggattacagcatgtggacaggcaa<sup>7</sup>atgggtgcttggagggtcatt  
L G V F V W E I K L W I T A C G Q A N G A W R V I  
gtaaacaatgtgactgggtcatacatgcactgtacatatatatcgagagatggaggatgccaccactcataaagt  
V N N V T G H T C T V H I Y R E M E D A T T H K V  
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V Y S S V T V K G P L H G V P V N E N Y Q P L G G  
attgaccgaaaacgtcttgcagcgagaaagaacagcaccacatactgctatgatttcccccttgcatttcaaaca  
I D R K R L A A R K N S T T Y C Y D F P L A F Q T  
tccttgaacagtcctggtcaatacagcagacaggaattcaaagagcta<sup>7</sup>atgataaggatctcctaaaagtaaca  
S L E Q S W S I Q Q T G I Q R A N D K D L L K V T  
gagcttaaattttccgaaaaagctggttagttgggtacttctcttgttctgcagagcgtcttcttggtactcaat  
E L K F S E K A G S W G T S L V P A E R L P G L N  
gatgttggcatggtagcctgggtgatggaaatgtgtacgcctaaattcccatctggaaggacaatattggttgtt  
D V G M V A W L M E M C T P K F P S G R T I L V V  
tcaaacgatgtgaccttcaaggccgggtcttttggccaagagaggatgcattctttagagcagtaactgatctt  
S N D V T F K A G S F G P R E D A F F R A V T D L  
gcctgtgcaaagaaaatacctttaatttacttggcagcaaattctggtgcccgtttaggtgttgcgaggaagtc  
A C A K K I P L I Y L A A N S G A R L G V A E E V  
aaagcttgtttcaaagttggttgggtctgaggaatctaaacctgaacatgggttttcagtatgtatatttaacacct  
K A C F K V G W S E E S K P E H G F Q Y V Y L T P  
gaggattatgctcgaatcggatcatcagtgatggcacatgaattaaagcttgaaagtgagaaaccagatgggtt  
E D Y A R I G S S V M A H E L K L E S G E T R W V

**Figure 4-4**

atagataccattgttggcaaagaagatggactgggagttgaaaacttgagtggtagtggggccattgccggtgcc  
 I D T I V G K E D G L G V E N L S G S G A I A G A  
 tattcaagggcatacaaggaaacctttacattgacatatgttacggtaggactgttgaattggtgcttatctt  
 Y S R A Y K E T F T L T Y V T G R T V G I G A Y L  
 gctaggcttgggatgaggtgcatacagaggcttgatcaacctataattcttacgggttttcagcattaacaaca  
 A R L G M R C I Q R L D Q P I I L T G F S A L N K  
 cttcttggtagggaggtgtacagctctcacatgcaacttggtaggacgaaaatcatggcaacaatggagtcgtt  
 L L G R E V Y S S H M Q L G G P K I M A T N G V V  
 catctcacagtttccggacgacctgaaggcggtttcttctatcttgaagtggcttagctacgttccttctcatgta  
 H L T V S D D L E G V S S I L K W L S Y V P S H V  
 ggtgggtgcacttcccattgtaaagccccttgatccccagagaggggaagtggagtatttacggaaaattcatgc  
 G G A L P I V K P L D P P E R E V E Y L P E N S C  
 gatcctcgtgctgocatttccggaactctggatgttaatggaaagtggctgggaggcatttttgacaaggacagc  
 D P R A A I S G T L D V N G K W L G G I F D K D S  
 tttgtggagacactagaaggatgggctagaacagttgttacaggaagggcaaagcttggaggaatccctgtggga  
 F V E T L E G W A R T V V T G R A K L G G I P V G  
 attgttgcggtggaaacacaaacagttatgcaaataatacctgctgatccagggtcaacttgattctcacgagagg  
 I V A V E T Q T V M Q I I P A D P G Q L D S H E R  
 gttgttccctcaagccggggcaggtgtgggttctctgattctgcgaccaagacggcccaagcgatattggatttcaac  
 V V P Q A G Q V W F P D S A T K T A Q A I L D F N  
 agagaagaactcccacttttccattatcgcaaactggagaggttttccagggtggacaaagggacctttttgaagga  
 R E E L P L F I I A N W R G F S G G Q R D L F E G  
 attcttcaggctgggttcgactattgtggagaaccttaggacatacaaacagcccatatttgtatacattccaatg  
 I L Q A G S T I V E N L R T Y K Q P I F V Y I P M  
 atgggtgaactccgaggcggggcgttgggttgttgcgacagccgaatcaactcagaccacattgaaatgtatgct  
 M G E L R G G A W V V V D S R I N S D H I E M Y A  
 gagcgaacggccaaaggtaacgtccttgagccggaaggaatgattgaaatcaaatttagaacaagagaattgttg  
 E R T A K G N V L E P E G M I E I K F R T R E L L  
 gagtgtatgagaagacttgatcaacaattgattaatttgaaggaaaaactttctgaagccaagagtaacaaggac  
 E C M R R L D Q Q L I N L K E K L S E A K S N K D  
 tatgggtgcatatgattctctgcagcagcagattagattccgtgagaaacagcttttgcctttgtatactcagata  
 Y G A Y D S L Q Q Q I R F R E K Q L L P L Y T Q I  
 gctacaaaatttgcgtgaactccatgatacttcattaagaatgaaagcaaagggtgtaatcagagaagttcttgat  
 A T K F A E L H D T S L R M K A K G V I R E V L D

**Figure 4-5**



100240 "246E360

tggcgtaagtcgcgttctgtcttctatcagagaactgcacaggagaatcggtgagcactcactgatcaacatcgtg  
W R K S R S V F Y Q R L H R R I G E H S L I N I V  
agagatgctgctggtgaccaattgtcatatgtttctgccatgaacttgctcaaagaatggatatctgaattctgat  
R D A A G D Q L S Y V S A M N L L K E W Y L N S D  
atcgccaaaggtagagaagatgcttggttgacgatgaagccttcttcagatggagggatgatccagcaaactac  
I A K G R E D A W L D D E A F F R W R D D P A N Y  
gaggataaaactaaaggaattgcgcgtccagagactggttgcttcagttgacaaatattggcgactcggctctagat  
E D K L K E L R V Q R L L L Q L T N I G D S A L D  
ttacaagctctacctcaaggtcttgccgcccttttaagcaagttggaagcatcaagtcgcgataagttgatcagt  
L Q A L P Q G L A A L L S K L E A S S R D K L I S  
gaacttcgcaaagtactcggttagtagacagtgaaatgctcctgtgatctgccatgcactcatgttgtagtggtc  
E L R K V L G (SEQ ID NO:8)  
acgtcgttgatacatgaccatatagaaatgtatccattttacgatgttatcatcaaagtagcagcatccctcgga  
aaatggactttcacttgagggatcaactgtaaatgacttcgggtcttgatagatatattaatttatgcagtttagag  
gatcataaccagcatcaccatgtttggtctatattttgctggttgattgattctttgcgtgtatctgaataaac  
atgtaataatttgtaacattgattatatttttatgaaaaacaaagttttgggcactccttttataaaaaaaaaaaaa  
aagaattcctgcagcccgggggatcc (SEQ ID NO:7)

**Figure 4-6**